

Submission under 37 C.F.R. §1.114
Serial No. 10/820,844
Attorney Docket No. 030486

REMARKS

Claims 5-16 are pending in this application, of which claims 5, 7, 8, 10, 12 and 13 have been amended. No new claims have been added in this response.

(1) The disclosure was objected to because of the informalities in the acetic anhydride structure on page 3 of the specification.

The specification has been amended in this Response. Withdrawal of the objection is respectfully requested.

(2) Claims 10-16 were rejected under 35USC §112, first paragraph as failing to comply with the written description requirement.

The specification, at page 1, lines 13 of the original specification, describes “bar-shaped chemiluminescent devices.” The description relates to the background of the present invention, but one skilled in the art can recognize that the composition, as recited in the original claims, is used for the “bar-shaped chemiluminescent devices.” Also, one skilled in the art can understand from the specification at page 3, line 25 to page 14, line 5 that the composition including acetyl tributyl citrate (ATBC) and the oxidizing liquid are separately stored before use, and they are

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mixed when inducing luminescent. Thus, claims 10-16 are supported by the original specification. Reconsideration of the rejection is respectfully requested.

(3) Claims 5 and 6 were rejected under 35USC §102(b) as being anticipated by Omniglow (WO94/19421).

Claim 5 has been amended to use a transitional phrase “consisting essentially of.” When an activator component as disclosed by Omniglow is added in the composition recited in claim 5, the composition will induce chemiluminescent. Thereafter, the claimed chemiluminescent composition will not exhibit the chemiluminescent performance which is compatible with the conventional composition using a phthalate solvent. Thus, the activator component materially affects the basic and novel characteristic of the invention recited in claims 5 and 6. Therefore, amended claims 5 and 6 are not anticipated by Omniglow.

(4) Claims 5-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Omniglow (WO 94/19421), and further in view of Zweig et al. (U.S. Patent No. 3,729,426); Roberts et al. (U.S. Patent No. 3,701,738) and/or Crigg (U.S. Patent No. 3,560,395).

(i) The Applicant herewith files a declaration under 37 C.F.R. §1.132.

(ii) The Examiner states that Omniglow (WO94/19421) discloses citrates as a solvent for an activator compound (page 3, lines 24-34), but as argued by the Applicant, the citrates are not taught as a solvent for the oxalate/fluorescent compound (page 7, lines 16-30). The Examiner however states that the Omniglow teaches acetyl citrate esters as a compound of the devices for the advantage of replacing the phthalates in the activator components, so that it would have been obvious to one of ordinary skilled in the art the time of applicants' invention to employ the acetyl citrate ester as a component of the oxalate/fluorescent component.

However, one skilled in the art cannot recognize that the citrates appropriate for a solvent for the activator component can be also appropriate for the solvent for the oxalate/fluorescent composition. Rather, the citrates appropriate for a solvent for the activator component is not always appropriate for the solvent for the oxalate/fluorescent composition, as shown in the declaration.

Omniglow specifically discloses dimethyl phthalate, triethyl citrate, acetyltriethyl citrate and acetyltributyl citrate in Examples A, 1, 3 and 7, respectively, in Table 1 at page 9. The loss of H_2O_2 was 2.0% in Example A (dimethyl phthalate); 2.0% in Example 1 (triethyl citrate); and 10.0% in Example 3 (acetyltriethyl citrate), whereas the loss of H_2O_2 was 45.0% (acetyltributyl citrate). Table 1 also discloses that Examples 1 and 3 were "good light performance initially and after accelerated aging," whereas Example 7 was "good light performance initially but poor

performance after accelerated aging.” Clearly, Omniglow suggests that acetyltributyl citrate is inferior to triethyl citrate and acetyltriethyl citrate.

On the other hand, as shown in the declaration as attached, triethyl citrate is not appropriate as a solvent for an oxalate/fluorescent composition. The luminescent performance of triethyl citrate was much lower than that of dimethyl phthalate. Triethyl citrate cannot be used as a compatible solvent of dimethyl phthalate.

(iii) The declaration indicates that comparison of Sample B (acetyltributyl citrate) with Samples A and C shows an unexpected result that acetyltributyl citrate can be used as a solvent for an oxalate/fluorescent composition to exhibit a performance compatible with dimethyl phthalate. Although Omniglow discloses that “in some embodiment it is preferred to employ a non-phthalate solvent for the oxalate component in order to provide a completely phthalate free chemiluminescent device (page 7, lines 27-30),” Omniglow does not disclose any specific, appropriate citrates for the oxalate/fluorescent composition. Rather, Omniglow lists “dimethyl phthalate, dibutyl phthalate and dioctyl phthalate” as a solvent for the oxalate/fluorescent composition, without listing any citrates (page 7, lines 16-30). This shows that Omniglow did not suggest employing citrates as a solvent for the oxalate/fluorescent composition, and moreover, it is not obvious to one skilled in the art to employ acetyltributyl citrate as a solvent for the oxalate/fluorescent composition. If the one skilled in the art would be motivated to employ the

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same phthalate free solvent for the oxalate/fluorescent composition as those for the activator component, as stated by the Examiner, Omniglow would list citrates as a solvent for the oxalate/fluorescent composition, and would not list any phthalates. The fact that Omniglow did not list any citrates but listed phthalates as a solvent for the oxalate/fluorescent composition indicates that one skilled in the art, including the inventor of Omniglow, cannot envisage citrates or acetyltributyl citrate as a solvent for the oxalate/fluorescent composition.

In view of the above, the fact that acetyltributyl citrate has been found to exhibit comparative performance with dimethyl phthalate should be considered as an unexpected result, because Omniglow does not teach any citrates as a solvent for the oxalate/fluorescent composition, and Omniglow suggests that acetyltributyl citrate is inferior to triethyl citrate and acetyltriethyl citrate as a solvent for an activator component.

Therefore, the invention in the amended claims is not obvious over the references. Reconsideration of the rejection is respectfully requested.


(3) In view of the aforementioned amendments and accompanying remarks, Applicant submits that that the claims, as herein amended, are in condition for allowance. Applicant requests such action at an early date.

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If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,
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Attachment: Limited Recognition
Declaration under 37CFR §1.132
Substitute Specification (Clean Version) with Marked-up Version